****

 **GUIDE**

 **SPECIFICATION**

Manufacturer:

**Oldcastle BuildingEnvelope®**

1350 Avenue of the Americas, Suite 2350

New York, NY 10019

Voice (866) 653-2278

**SECTION 08 41 00 - ALUMINUM ENTRANCES MS-375TC\_WS-500TC Thermal Composite Entrance**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

This guide specification has been prepared by Oldcastle BuildingEnvelope® in printed and electronic media as an aid to specifiers in preparing written construction documents for storefront systems.

This section includes NEW thermal aluminum doors, and frames for exterior applications, shop fabricated, factory pre-finished, for field glazing.

Door hardware may be specified in whole or in part in this section or in Section 08 71 00 - Hardware; coordinate requirements.

Sealants are referenced to Section 07 90 00, Sealants Sealers.

Glass and glazing are referenced in Section 08 80 00, Glass and Glazing.

Where work of this section integrates with curtain wall, sloped glazing system, skylight, windows, or other glazing system, carefully coordinate both sections to function together. Air and vapor barrier continuity from this system to adjacent construction is critical to successful building air tightness; specify compatible materials in conjunction with adjacent air and vapor barriers.

Edit entire master to suit project requirements. Modify or add items as necessary. Delete items that are not applicable. Words and sentences within brackets [\_\_\_\_\_] reflect a choice to be made regarding inclusion or exclusion of a particular item or statement. This section may include performance, proprietary, and descriptive type specifications. Edit to avoid conflicting requirements.

Editor notes are included within the text of this section to assist the specifier in knowledgeable decision-making.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**PART 1 - GENERAL**

1.01 SUMMARY

 A. Related Documents: Conditions of the Contract, Division 1 - General Requirements, and Drawings apply to Work of this Section.

 B. Section Includes:

 1. Aluminum doors complete with hardware.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Edit paragraph below to suit project requirements.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 C. Products Furnished But Not Installed Under This Section:

 1. Anchoring devices that are built into masonry.

 2. Anchoring devices that are cast in concrete.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

This document incorporates CSI (Construction Specifications Institute) Manual of Practice principles of cross-referencing to Division 1 sections and other sections. The cross references must be edited to retain only those other sections used. Other guide specifications for Oldcastle BuildingEnvelope® are available as follows:

 Section 08 41 26 ‑ All Glass Entrances and Storefronts

 Section 08 43 13 ‑ Aluminum- Framed Storefronts

 Section 08 44 13 ‑ Glazed Aluminum Curtain Wall

 Section 08 44 23 - Structural-Sealant-Glazed Curtain Wall

 Section 08 44 33 ‑ Sloped Glazing Assemblies

 Section 08 51 13 - Aluminum Windows

 Section 08 63 00 - Metal-Framed Skylights

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 D. Related Sections:

 1. Section 01 43 39 - Mock-ups.

 2. Section 05 50 00 ‑Metal Fabrications.

 3. Section 06 10 00 ‑Rough Carpentry.

 4. Section 07 92 00 - Joint Sealants

 5. Section 08 42 20 - Entrances.

 6. Section 08 45 00 ‑Translucent Wall and Roof Assemblies

 7. Section 08 51 00 ‑Metal Windows

 8. Section 08 71 00 ‑Door Hardware

 9. Section 08 81 00 - Glass Glazing

 10. Section 08 85 00 - Glazing Accessories

 11. Section 08 88 00 ‑Special Function Glazing

 12 Section 08 91 19 ‑Fixed Louvers

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Use the article below carefully; restrict statements to describe components used to assemble the system. Do not repeat statements made in the SECTION INCLUDES article. Restrict statements to identify system performance requirements or function criteria only. Delete paragraphs not appropriate to project.

The following paragraphs represent a suggested listing of performance criteria.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1.02 SYSTEM REQUIREMENTS

 A. Design Requirements:

 1. Drawings are diagrammatic and do not purport to identify nor solve problems of thermal or structural movement, glazing, anchorage, or moisture disposal.

 2. Requirements shown by details are intended to establish basic dimension of units, sight lines and profiles of members.

 3. Provide concealed fastening.

 4. Provide entrance and storefront systems, including necessary modifications, to meet specified requirements and maintaining visual design concepts.

 5. Attachment considerations are to take into account site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing connection between units and building structure or between units themselves.

 6. Provide for expansion and contraction due to structural movement without detriment to appearance or performance.

 B. Thermal Requirements:

 1. Framing systems shall accommodate expansion and contraction movement due to surface temperature differentials of 180F without causing buckling, stress on glass, failure of joint seals, excessive stress on structural elements, reduction of performance, or other detrimental effects.

 2. Ensure doors function normally within limits of specified temperature range.

 3. Thermal Performance:

a. Thermal Transmittance Coefficient (U-factor): When simulated based on NFRC 100, 1" (25.4mm) low-E (with Low-e glass, e=0.21) insulating glazing = The conductive thermal transmittance (U-factor) shall not be more than.45 BTU/hr/sf/°F (2.55 W/m2-K) using Low-E glazing

C. Performance Requirements:

 Single Door:

 1. Air infiltration @ 1.57 (75 PA) psf: Air leakage for single doors shall not exceed 0.20 CFM/FT² when tested in accordance with ASTM E283.

 Air infiltration@ 6.24 (300 PA) psf: Air leakage for single doors shall not exceed 0.50 CFM/FT² when tested in accordance with ASTM E283.

 3. Wind loads: Provide framing system capable of withstanding wind load design pressures of 50 psf (2394 PA) acting inward and 50 psf (2394 PA) acting outward. The design pressures are to be tested per ASTM E-330.

 4. Forced Entry testing per AAMA1304

 5. Cycle Test per AAMA 920-16 for 500,000 cycles.

 Pairs of Doors

 1. Air infiltration @ 1.57 (75 PA) psf: Air leakage for pairs of doors shall not exceed 1.00 CFM/FT² (when tested in accordance with ASTM E283.

 2. Wind loads: Provide framing system capable of withstanding wind load design pressures of 50 psf (2394 PA) acting inward and 50 (2394 PA) psf acting outward. The design pressures are to be tested per ASTM E-330.

 3. Forced Entry testing per AAMA1304

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Include submittal requirements below, which are consistent with scope of project and extent of work of this section. Only request submittals that are absolutely necessary.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1.03 SUBMITTALS

 A. General: Submit in accordance with Section 01 30 00.

 B. Product Data:

 1. Submit manufacturer's descriptive literature and product specifications.

 2. Include information for factory finishes, hardware, accessories, and other required components.

 [3. Include color charts for finish indicating manufacturer's standard colors available for selection.]

 C. Shop Drawings:

 1. Submit shop drawings covering fabrication, installation and finish of specified systems.

 2. Include following:

 a. Fully dimensioned plans and elevations with detail coordination keys.

 b. Locations of exposed fasteners and joints.

 3. Provide detailed drawings of:

 a. Composite members.

 b. Joint connections for framing systems and for entrance doors.

 c. Anchorage.

 d. System reinforcements.

 e. System expansion and contraction provisions.

 f. Glazing methods and accessories.

 g. Internal sealant requirements and recommended types.

 4. Schedule of finishes.

 D. Samples:

 1. Submit manufacturers standard samples indicating quality of finish.

 2. Where normal texture or color variations are expected, include additional samples illustrating range of variation.

 [3. Submit samples for each type of glass, 12 x 12 inch size.]

 E. Qualification Data:

 1. Submit installer qualifications verifying years of experience.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Include quality assurance requirements consistent with size and scope of project and extent of work of this section. Edit following article accordingly.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1.04 QUALITY ASSURANCE

 A. Single Source Responsibility:

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Oldcastle BuildingEnvelope® is unique in the industry in single source responsibility. First, system design, extrusion, fabrication, and finishing occur at the same facility, and under strict tolerances, assuring uniformity of profile and finishes between systems. Second, Oldcastle BuildingEnvelope® products include a full array of storefront (including operable vents on some systems), curtain wall, all glass entrances, sliding mall fronts, sloped glazing, and flush faced aluminum framed doors, as well as all the monumental and unit skylight products and glass, allowing the designer and specifier a single source of responsibility when combining products from any of these categories.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 1. To ensure quality of appearance and performance, obtain materials for systems from either a single manufacturer or from manufacturer approved by systems manufacturer.

 B. Installer Qualifications: Certified in writing by system manufacturer as qualified for installation of specified systems.

 C. Perform Work in accordance with AAMA SFM‑1 and manufacturer's written instructions.

 D. Conform to requirements of ANSI A117.1 and local amendments.

1.05 DELIVERY, STORAGE, AND HANDLING

 A. Comply with requirements of Section 01 65 00 - 01 66 00.

 B. Protect finished surfaces as necessary to prevent damage.

 C. Do not use adhesive papers or sprayed coatings that become firmly bonded when exposed to sun.

 D. Do not leave coating residue on any surfaces.

 E. Replace damaged units.

1.06 WARRANTY

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Note: Longer warranty periods are available at additional cost.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 A. Provide warranties in accordance with Section 01 78 36.

 B. Provide written warranty in form acceptable to Owner jointly signed by manufacturer, installer and Contractor warranting work to be watertight, free from deflective materials, defective workmanship, glass breakage due to defective design, and agreeing to replace components which fail within 1 year from date of Substantial Completion.

 C. Warranty shall cover following:

 1. Air performance installation within specified tolerances.

 2. System is structurally sound and free from distortion.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Delete paragraph below if high performance fluoropolymer finish not used.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

1. D. Provide written warranty stating organic coating finish will be free from fading more than 10%, chalking, yellowing, peeling, cracking, pitting, corroding or non-uniformity of color, or gloss deterioration beyond manufacturer's descriptive standards for 5 years from date of Substantial Completion and agreeing to promptly correct defects.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS AND PRODUCTS

 A. Subject to compliance with requirements indicated, provide products by one of the following:

 1. Oldcastle BuildingEnvelope®, Terrell, TX.

 B. Substitutions: Submit under provisions of Section 01 63 00, a minimum of 10 days prior to bid date.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Edit the following paragraphs for appropriate system in each category and delete remaining. Refer to Oldcastle BuildingEnvelope® technical literature for additional information.

When specifying manufacturer's standard product or manufacturer's standard product with modifications, describe using manufacturer's name and model numbers.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 C. Acceptable Entrance Systems:

 Standard duty systems (0.125" (3.17mm) wall thickness; 2-1/4" (57.15mm) deep)

 Model: MS-375TC - medium stile thermal (8" (203.2mm)(10" (254mm)) bottom rail, 4" (101.6mm) top rail, 3-3/4" (95.25mm) verticals)

 WS-500TC - wide stile thermal (8" (203.2mm)(10" (254mm)) bottom rail, 4" (101.6mm) top rail, 5" (127mm) verticals)

2.02 FRAMING MATERIALS AND ACCESSORIES

 A. Aluminum:

 1. ASTM B221, alloy 6063-T6 for extrusions; ASTM B209, alloy 5005-H16 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.

 B. Fasteners:

 1. Aluminum, non-magnetic stainless steel or other non-corrosive materials compatible with items being fastened.

 2. Provide concealed fasteners wherever possible.

 3. For exposed locations, provide Phillips flathead screws with finish matching item fastened.

 4. For concealed locations, provide manufacturer's standard fasteners.

 C. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.

 D. Protective Coatings: Cold-applied asphalt mastic complying with SSPC-Paint 12, compounded for 30 mil thickness for each coat; or alkyd type zinc chromate primer complying with FS TT-P-645.

 E. Touch-Up Primer for Galvanized Components: Zinc oxide conforming to FS TT-P-641.

 F. Glazing Gaskets:

 1. Compression type design, replaceable, molded or extruded, silicone, or ethylene propylene diene monomer (EPDM).

 2. Profile and hardness as required, to maintain uniform pressure for watertight seal.

 G. Thermal separation consisting of extruded glass reinforced Polyamide.

 H. Dual Weather-stripping:

 1. Provide Bulb gasket full perimeter of frame

 2. Provide EPDM or silicone gasket weather-stripping in bottom & top door rail, for contact with threshold and door header.

 3. Provide EPDM extruded gasket at jambs and door header.

 4. Provide pile weather exterior and dual bulb weathering at interior of adjustable astragals on pairs of doors.

2.03 GLASS AND GLAZING ACCESSORIES

 A. Refer to Section 08 80 00.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Entrance manufacturer's standard hardware should be specified here and all other non-standard hardware can be specified here or in section 08 71 00 - Door Hardware. However, door hardware, should be installed by storefront and entrance manufacturer. Coordinate requirements.

List each item of hardware to be furnished. Describe each item by giving manufacturer's name, catalog number, size, finish, and special features. Add, delete and edit as required.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

2.04 DOOR HARDWARE

 A. Hardware Items:

 1 Butt hinges: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 2. Gear hinges: Pemko FM\_SLI or equivalent.

 3. Surface closers: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 4. Push bar: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 5. Pulls: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 6. Panic devices: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 7. Deadlocks: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 8. Dead-latch: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 9. Knob-lock: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 10. Cylinders: Specified in Section 08710.

 11. Electric strikes: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 12. Flush bolts: [\_\_\_\_\_\_\_\_\_].

 13. Coordinators: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 14. Door holders: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 15. Stops: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 16. Kick-plates: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

 17. Thresholds: OBE TH-65 or equivalent

 18. Door Weather-stripping: Manufacturer's standard.

 19. Concealed Overhead Closure: Not recommended, see note below.

 20. Floor Closure: See note below. [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Create a hardware set for each door. List each item of hardware proposed on a specific door to form a hardware set. List item by title and quantity required per opening. Each set shall list door openings to which set is applicable. Following hardware set is an example. Edit as necessary and create additional sets as required by project conditions.

Use of a concealed overhead closure will result in a non-thermal door head condition and thermal performance of system will be greatly reduced. Floor closures may be used in an out-swing installation, but door cannot be installed as a center pivot or in-swing installation.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 [B. Hardware Set 1, each single door shall have:

 1. 1-1/2 pair butt hinges.

 2. 1 each deadlock.

 3. 1 each closer.

 4. 1 set push/pull bars.

 5. 1 each stop.

 6. 1 each threshold.

2.05 FABRICATION

 A. Coordination of Fabrication:

 1. Check actual frame or door openings required in construction work by accurate field measurements before fabrication.

 2. Fabricate units to withstand loads that will be applied when system is in place.

 B. General

 1. Conceal fasteners wherever possible.

 2. Reinforce work as necessary for performance requirements, and for support to structure.

 3. Separate dissimilar metals and aluminum in contact with concrete utilizing protective coating or preformed separators, which will prevent contact and corrosion.

 4. Comply with Section 08 81 00 for glazing requirements.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Glazing is normally done after system has been erected and done from inside or outside. Large plates of glass can normally be glazed most readily from outside. Headroom and space often make it impossible to glaze from inside. Glass replacement must also be considered. Edit item below for inside or outside glazing.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 C. Entrance Doors:

 1. Fabricate with mechanical joints using internal [steel] reinforcing plates and shear blocks attached with fasteners and by welding.

1. Provide extruded aluminum glazing stops of square design.
2. Extruded rigid fiberglass reinforced polyamide struts are used as a thermal separator between interior and exterior of door.
3. [ Pairs of doors shall have twin pile seals at the exterior with an adjustable astragal on active stile and twin adjustable co-extruded astragals at the interior.]

 D. Hardware:

 [1. Receive hardware supplied in accordance with Section 08 71 00 and install in accordance with requirements of this Section.]

 2. Cut, reinforce, drill and tap frames and doors as required to receive hardware.

 3. Comply with hardware manufacturer's templates and instructions.

 4. Use concealed fasteners wherever possible.

 E. Welding:

 1. Comply with recommendations of the American Welding Society.

 2. Use recommended electrodes and methods to avoid distortion and discoloration.

 3. Grind exposed welds smooth and flush with adjacent surfaces; restore mechanical finish.

 F. Flashings: Form from sheet aluminum with same finish as extruded sections. Material thickness shall be as required, suitable to condition, without deflection or "oil-canning".

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Select and edit following items for appropriate finish; delete inapplicable types. Oldcastle BuildingEnvelope® is a licensed applicator for all of the coating manufacturers listed below.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

2.06 FINISHES

 A. Organic Coating (high performance fluorocarbon):

 1. Comply with requirements of AAMA 2605.

 2. Surfaces cleaned and given conversion coating pre-treatment prior to application of 0.3 mil dry film thickness of epoxy or acrylic primer following recommendations of finish coat manufacturer.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Note: A less expensive finish coat containing a minimum of 50% fluorocarbon resin is also available, and meets AAMA 2603, but with reduced performance over time.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 3. Finish coat of [50%] [70%] minimum fluorocarbon resin fused to primed surfaces at temperature recommended by manufacturer, 1.0 mil minimum dry film thickness.

 4. Acceptable coatings are Trinar by Akzo Coatings, Inc.; Nubelar by Glidden Company; Fluoroceram by Morton International, Inc.; Duranar by PPG Industries Inc.; and Fluropon by Valspar Corporation.

 5. Provide in either a 2, 3, or 4 coat system as required for color selected.

 6. [Custom colors as selected by Architect.]

 \*\*\*\*\* OR \*\*\*\*\*

 [7. Manufacturer's standard colors as selected by Architect.]

 \*\*\*\*\* OR \*\*\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Oldcastle BuildingEnvelope® utilizes a computer driven anodizing system that produces the closest color range available.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

 [B. Clear Anodized:

 1. Conforming to AA-M12C22A31 and AAMA 611.

 2. Architectural Class [I] [II], etched, medium matte, clear anodic coating, [0.7] [0.4] mil minimum thickness.]

 \*\*\*\*\* OR \*\*\*\*\*

 [C. Color Anodized:

 1. Conforming to AA-M12C22A44 and AAMA 611.

 2. Architectural Class [I] [II], etched, medium matte, [black] [dark bronze] [medium bronze] [light bronze] colored anodic coating, [0.7] [0.4] mil minimum thickness.]

**PART 3 - EXECUTION**

3.01 EXAMINATION

 A. Examine conditions and proceed with Work in accordance with Section 01400.

3.02 INSTALLATION

 A. Erection Tolerances:

 1. Limit variations from plumb and level:

 a. 1/8 inch in 10'-0" vertically.

 b. 1/8 inch in 20'-0" horizontally.

 2. Limit variations from theoretical locations: 1/4 inch for any member at any location.

 3. Limit offsets in theoretical end-to-end and edge-to-edge alignment: 1/16 inch from flush surfaces not more than 2 inches apart or out-of-flush by more than 1/4 inch.

 B. Install doors and hardware in accordance with manufacturer's printed instructions.

 C. Set units plumb, level and true to line, without warp or rack of frame.

 D. Anchor securely in place, allowing for required movement, including expansion and contraction.

 E. Separate dissimilar materials at contact points, including metal in contact with masonry or concrete surfaces, with bituminous paint or preformed separators to prevent contact and corrosion.

 F. Set sill members in bed of sealant. Set other members with internal sealants and baffles to provide weather-tight construction.

 G. Coordinate installation of perimeter sealant and backing materials between assemblies and adjacent construction in accordance with requirements of Section 07920.

 H. Glazing: Refer to requirements of Section 08810.

3.03 ADJUSTING

 A. Test door operating functions. Adjust closing and latching speeds and other hardware in accordance with manufacturer's instructions to ensure smooth operation.

3.04 CLEANING

 A. Clean surfaces in compliance with manufacturer's recommendations; remove excess mastic, mastic smears, foreign materials and other unsightly marks.

 B. Clean metal surfaces exercising care to avoid damage.

 **END OF SECTION**